WAYNE COUNTY
DEPARTMENT OF HEALTH

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July 11, 1977

Grosse Ile Township Planning Commission
Grosse Ile Township
P. O. Box 116
Grosse Ile, Michigan 48138

Attention: Mr. Larry Davison, Planning Coordinator

Gentlemen:

Re: Proposed Dredging Spoils Fill - Pt. Mennipin

Pursuant to your request as stated in the correspondence dated June 27, 1977 to Robert Barber, Donald Vilnius and me, I have compiled our point by point response to your questions.

1. The Lower Rouge River dredging spoils proposed for disposal on Pt. Mennipin can be considered contaminated and similar to dredging materials collected by the Army Corps and deposited on Grassy Island, etc. and representative of dredging materials associated with the highly industrialized area like the Detroit River system.

2. The concerns our agency has regarding the use of dredging spoils from Pt. Mennipin are based on the area of disposal. We have very little reservation about filling the sink holes with material of the type characterized by the April analysis for the following reasons:

   a) Since the hydrogeological situation in the sink holes can be described as a zero net flow condition, the likelihood of leachate migration into the underlying aquifer is practically negligible.

   b) The water currently occupying the sink hole is presently contaminated beyond drinking water standards due to the extensive brine mining and anhydrite deposition from years past. Therefore, calcium, sodium chloride, sulphates, and total dissolved solid concentrations are extremely high.

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c) By virtue of filling with dredging spoils we would eventually expect a plugging effect due to the high percentages and impermeable nature of the clay and silt found in the dredgings. Over a period of time the dredging materials will dewater and consolidate at the sink hole bottom creating the plug. The clay portion of the dredging materials are particularly significant since clay particles have cation exchange capacity which would be beneficial in attenuating potential migration of many contaminants.

d) The underlying aquifer is presently a non-potable water source.

Our greatest concern regarding the sink hole fill would involve the discharge of spoils supernatant from the sink hole. However, as you know, it will probably be a number of years before displacement necessitates the discharge of sink hole-dredging water.

Our concern regarding the proposal to fill upland areas also involves the proper discharge of contaminated surface water and dredging supernatant. It would seem appropriate to confine any upland disposal area so that runoff and dredging spoils supernatant could accumulate and settle out many of the contaminants prior to discharge to the river. This could be accomplished by methodology similar to that employed by the Army Corps in their spoils disposal areas. Properly constructed this could also be part of an erosion control system. Once an area is completed, i.e., stabilized with vegetation, the volume of surface water runoff and its degree of contact with contaminated dredging spoils will significantly decrease, presumably making the overflow system obsolete.

Other concerns worth your consideration would include the use of dredging spoils with unique characteristics such as may be found in areas adjacent to sewage treatment plant outfalls. The above example would raise questions primarily regarding odor and possible bacterial contamination. Dredging spoils obtained from areas adjacent to specific industrial outfalls may also have unique,, but not necessarily objectionable, characteristics worth investigating depending on your area of concern, i.e., odor, pH, vegetative growth potential, etc.

3. Testing that we would recommend involves water quality monitoring prior to the discharge of sink hole and upland fill supernatant to State waters. This type of testing would be presumably set up by D.N.R. Water Quality Division staff prior to discharge authorization.

It also may be judicious to consider sampling and/or lab analysis of representative samples from major dredging locations if a particular characteristic is of concern and can reasonably be anticipated.

4. Chemically the dredging spoils would not typically be considered unsafe for tactile human contact. This is to say the pH range of the dredging spoils

would not produce alkaline or acid type burns. However, since the spoils could theoretically contain any of a number of harmful chemicals, intimate or regular body contact or ingestion is not recommended. Similarly, the drinking of water in contact with the waste is definitely not recommended.

5. If the former sink holes were determined to be geologically stable, we could foresee no problem in the future development of the areas as described in your question.

6. The project is subject to Departmental approval under Act 347, Public Acts of 1972, the Soil Erosion and Sedimentation Control Act.

7. A soil erosion and sedimentation control permit under Act 347, P.A. 1972 as amended, is the only permit necessary for this project from our Department. BASF-Wyandotte obtained an erosion control permit for filling the sink holes from our Department in March of 1976. A copy of this permit was sent to the Grosse Ile Building Department at the time the permit was issued.

8. Our Department's approval is not contingent on the approval of any other agency. However, we attempt to coordinate any requirements we may make with the requirements of other agencies involved. Our permit does not obviate B.A.S.F.'s need to obtain other permits or clearances necessary from Federal, State or local agencies.

9. Under the soil erosion control permit the fill is inspected approximately monthly to assure that the dredgings from the fill area are not eroding back into the canal.

10. The soil erosion control permit would be revoked if the fill operation violated the erosion control act or rules. Basically this would mean that the dredgings from the fill were eroding back into the river or canal. If appropriate and timely steps were not taken to minimize off-site sedimentation, the permit would be revoked and a cease and desist order issued.

11. The fill of the sinkholes is considered an ongoing project under our permit procedures. As such, the permit must be renewed each year. The current erosion control permit for filling the sinkholes expired March 31, 1977. B.A.S.F. is currently in the process of requesting a renewal.

If you have any questions or need additional information, please call me.

Very truly yours,

Michael E. Andrews

Michael E. Andrews, P.E., Assistant Director
Division of Environmental Health

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cc: Tom Work, D.N.R.